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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,201	02/22/2005	Takaya Sato	0171-1182PUSI	7752
2292	7590	06/21/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			THOMAS, ERIC W	
			ART UNIT	PAPER NUMBER
			2831	

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/525,201

Applicant(s)

SATO ET AL.

Examiner

Eric Thomas

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/22/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 1, 7-9 are objected to because of the following informalities:

Claim 1 line 3 insert ~~the~~ before "electrical".

Claim 1 recites the limitation "the MP method" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 line 2, the limitation, "an activated carbon" is confusing. Is this the same activated carbon already claimed?

Claim 7 recites the limitation "the activated form" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8, line 2, change "a synthetic resin" to ~~the synthetic resin~~.

Claim 9, line 2, change "a phenolic resin and/or polycarbodiimide resin" to ~~at least one elected from the group consisting of phenolic and polycarbodiimide resin~~.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 5/1-5/2, 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al. (EP 927778).

Maeda et al. disclose an electric double layer capacitor comprising a pair of polarizable electrodes, a separator between the polarizable electrode and a liquid electrolyte, wherein the electric double layer capacitor is characterized in that the polarizable electrodes contain as a main component an activated carbon having micropores with a pore radius distribution peak within a range of 4.0 to 8.0×10^{-10} m (pores represented by A_v), and the liquid electrolyte includes an electrolyte salt which is an ionic liquid.

Regarding claim 2, Maeda et al. disclose the ionic liquid is a quaternary ammonium salt.

Regarding claim 5/1-5/2, Maeda et al. disclose the pore radius distribution peak is $4.5 - 7 \times 10^{-10}$ m.

Regarding claim 6, Maeda et al. disclose the ionic liquid has a concentration of 1 to 2.0 mol/L (paragraph 91)

Regarding claim 7, Maeda et al. disclose the activated carbon is an activated form of a synthetic resin.

Regarding claim 8, Maeda et al. disclose the activated carbon is a steam-activated form of the synthetic resin.

Regarding claim 9, Maeda et al. disclose the synthetic resin is a phenolic resin.

Claim Rejections - 35 USC § 103

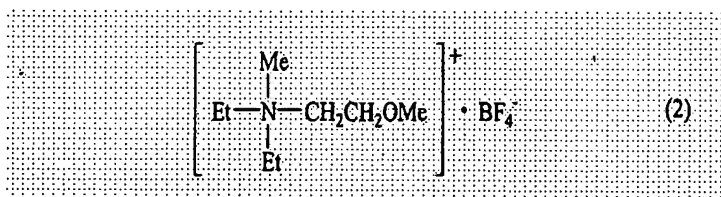
5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3-4, 5/3-5/4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (EP 927778).

Regarding claims 3 & 4, Maeda et al. disclose the claimed invention except for the ionic liquid has a general formula:



wherein Me is a methyl and Et is an ethyl.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ionic liquid of the formula 2 above in the capacitor of Maeda et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claims 5/3-5/4, Maeda et al. disclose the pore radius distribution peak is $4.5 - 7 \times 10^{-10}$ m.

8. Claims 1-3, 5/1-5/3, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-249551 ('551) in view of Morimoto et al. (US 4,725,926).

'511 discloses an electric double layer capacitor (fig. 4) comprising a pair of polarizable electrodes, a separator between the polarizable electrodes and an electrolyte, the electrical double layer capacitor is characterized in that the polarizable electrodes contain as a main component an activated carbon having micropores with a pore radius distribution peak of about 7 Angstroms (see fig. 7).

'551 discloses the claimed invention except for the liquid electrolyte is an electrolyte salt.

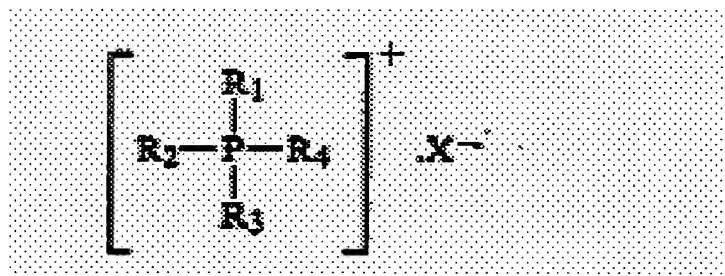
Morimoto et al. teach the use of an ionic liquid electrolyte salt used in an electric double layer capacitor.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the electrolyte of Morimoto et al. in the capacitor of '511, since such a modification would provide an electrolyte having high electroconductivity

and improve the overall capacity and working voltage of the electric double layer capacitor.

Regarding claim 2, Morimoto et al. teach that the ionic liquid is a quaternary phosphonium salt (abstract).

Regarding claim 3, Morimoto et al. teach the ionic liquid has a general formula:



wherein R1-R4 are independently an alkyl group of 1 to 5 carbons, P is a phosphorus atom, and X is a monovalent anion.

Regarding claim 5/1-5/3, '551 discloses the pore radius distribution peak is 7 angstroms.

Regarding claim 6, '551 discloses the ionic liquid has a concentration of from 0.5 to 2.0 mol/L (see col. 2 lines 45-55).

Regarding claim 7, '551 discloses the activated carbon is the activated form of a synthetic resin.

Regarding claim 8, '551 discloses the claimed invention. Regarding the limitation, "steam activated form of a synthetic resin" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


3,652,902 – electric double layer capacitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ewt

 6-16-06
ERIC W. THOMAS
PRIMARY EXAMINER